

2063

B.E. (Biotechnology) Third Semester  
BIO-314: Cell Biology and Genetics

Time allowed: 3 Hours

Max. Marks: 50

*NOTE: Attempt five questions in all, including Question No. 1 which is compulsory and selecting two questions from each Section.*

x-x-x

1. Write very short answer to followings (1\*10=10)

- a) Major forms of DNA
- b) ECM in skin
- c) Chromosomal arm ratio
- d) Topoisomerase
- e) Function of p<sup>21</sup> protein
- f) Euchromatin
- g) Cell plates
- h) Dihybrid ratio in incomplete dominance
- i) 47, XY, +21 genotype refers to
- j) Appearance of variegated coloured kernels in maize is typical example of ....

**Section-A**

2. Describing structural details of giant chromosomes, portray its functional organization. (10)
3. Describe structure and mechanism of active transporters present in the membrane. (10)
4. Write a detailed note on (Any two) (10)
  - a) Microtubules
  - b) Cyclins
  - c) Nucleosome

**Section-B**

5. Describe types of gene epistasis. How it differs from dominance, take example. (10)
6. a) Write a note on C-value paradox and cot curve analysis. (5)  
b) Describe the genetic evidence to determine if a trait is expressing maternal inheritance? (5)
7. a) How genetic linkage is related to genetic mapping. (5)  
b) Write a note on structural abnormalities of chromosomes. (5)

x-x-x

